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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

**Application No.**

09/459,380

**Applicant(s)**

HUBOI, PETER ALLEN

**Examiner**

Donald L. Storm

**Art Unit**

2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-54 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-54 is/are rejected.
- 7) ☒ Claim(s) 17-22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Continued Examination Under 37 CFR 1.114*

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114.

The Applicant's AMENDMENT AND RESPONSE TO FINAL OFFICE ACTION, filed November 5, 2007, has been entered. An action continuing examination on the merits follows. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

### *Claim Informalities*

2. Claim 17 is objected to because the manner of making amendments is not in accordance with 37 CFR 1.121. For amendment to claims, 37 CFR 1.121(c)(2) requires that markings indicate the changes that have been made relative to the immediate prior version of the claims. See MPEP § 714(II)(C).

In claim 17, line beginning *tion corresponds*, markings indicate that the phrase "total score" has been deleted. That indication appears to be inaccurate, because the immediate prior version of the claim does not include the word "total" at that location in the claim.

To advance prosecution, the Applicant's amended claim 17, and all claims filed November 5, 2007 have been entered; this version is currently the version that may be amended in accordance with 37 CFR 1.121.

3. Claim 17, and by dependency claims 18-22, are objected to under 37 CFR 1.75(a) because the phrase "the total score" (line beginning *the stored actions*) lacks antecedent basis in the claim.

Because no total score was previously recited, it may be unclear as to what element this phrase refers. To further timely prosecution and evaluate prior art, the Examiner has interpreted this phrase to refer to --the final criteria measurement--.

*Claim Rejections - 35 USC § 102*

McDonough

4. Claims 1, 4-5, 8-10, 13-17, 22-23, 28-29, 47, and 48 are rejected under 35 U.S.C. 102(b) as being anticipated by McDonough et al. [US Patent 5,625,748], already of record.

5. Regarding claim 1, McDonough describes the claimed limitations as a whole recognizable to one versed in the art as the embodiment for processing untranscribed speech by describing the content and functionality of the recited limitations recognizable as a whole to one versed in the art as the following terminology:

voice representations and voice messages [at column 6, lines 23-29, as untranscribed speech data];

storing voice, corresponding to a word or phrase [at column 2, lines 1-17, as training words to the vocabulary, and at column 5, lines 47-48, as a vocabulary of words and phrases for speech events];

each voice representation is associated with a value [at column 6, lines 41-42, as parameter values for individual event distributions];

storing actions [at column 2, lines 14-17, as create a new node associating an action with a word];

receive a voice message [at column 1, lines 53-54, as provide an input speech message];

analyze the voice message to determine if one or more stored voice representations occur in the message [at column 5, lines 43-50, as process a spoken message to produce a signal for the potential speech events in the spoken data];

generate a final criteria measurement value associated with the voice message [at column 7, lines 28-44, as summing confidence scores over the speech data];

perform one (or more) action(s) if the stored voice representations are found in the voice message [at column 2, lines 1-8, as route the message according to the action associated with the word];

performing the (stored) action based on the final criteria measurement value [at column 12, lines 28-41, as sort, classify or route based on the topic, wherein at column 5, line 64-column 6, line 1 the topic choice is a confidence score that a topic is present].

6. Claim 4 is rejected using the same rationale as in the previous Office action that was mailed November 20, 2002 as paper 3, and is reproduced here:

Claim 4 is set forth including the limitations of claim 1. McDonough describes those limitations as indicated there. McDonough also describes additional limitations as follows:

the user specifying words or phrases [at column 12, lines 11-13, as keywords selected by an operator];

storing a voice representation of each user specified word or phrase [at column 2, lines 1-17, as training words to the vocabulary];

the user specified words or phrases are included in analyzing the voice message [at column 12, lines 1-27, as keywords selected by the user are modeled in the event detector].

7. Claim 5 is rejected using the same rationale as in the previous Office action that was mailed November 20, 2002 as paper 3, and is reproduced here:

Claim 5 is set forth including the limitations of claim 1. McDonough describes those limitations as indicated there. McDonough also describes additional limitations as follows:

the user specifying actions to be performed if the voice representation is found in the voice message [at column 2, lines 1-24, as the user specifies the correctness of the action associated with the word to route the message according to the action associated with the word];

storing the user specified actions [at column 2, lines 1-24, as the user specifies the correctness of the action to create a new node associating an action with a word];

the user specified actions are included in performing the stored actions [at column 2, lines 1-24, as route the message according to the action associated with the word for which the user specifies the correctness of the action associated with the word].

8. Claim 8 is rejected using the same rationale as in the previous Office action that was mailed November 20, 2002 as paper 3, and is reproduced here:

Claim 8 is set forth including the limitations of claim 1. McDonough describes and make obvious those limitations as indicated there. Because McDonough's embodiments are directed equally to either processing of phone calls or processing of stored messages, McDonough describes:

forwarding the voice message [at column 12, lines 36-41, as routing a phone call based on the message, where the message is forwarded in the embodiment processing a stored message].

9. Claim 9 is rejected using the same rationale as in the previous Office action that was mailed November 20, 2002 as paper 3, and is reproduced here:

Claim 9 is set forth including the limitations of claim 1. McDonough describes and make obvious those limitations as indicated there. Because McDonough's embodiments are directed equally to either processing of phone calls or processing of stored messages, McDonough describes:

the voice message is received over a telephone line [at column 2, line 19, as speech over the telephone].

10. Regarding claim 10, McDonough describes the claimed limitations as a whole recognizable to one versed in the art as the embodiment for processing untranscribed speech by describing the content and functionality of the recited limitations recognizable as a whole to one versed in the art as the following terminology:

voice representations and voice information from a person [at column 6, lines 23-29, as untranscribed speech data, where at column 2, lines 25-26, the user speaks naturally];

storing voice, corresponding to a word or phrase [at column 2, lines 1-17, as training words to the vocabulary, and at column 5, lines 47-48, as a vocabulary of words and phrases for speech events];

each voice representation is associated with a value [at column 6, lines 41-42, as parameter values for individual event distributions];

storing actions [at column 2, lines 14-17, as create a new node associating an action with a word];

receive voice information from a person over a communications line [at column 2, lines 18-19, as conversational speech over the telephone];

analyze the voice information from the person to determine if a stored voice representation occurs in the voice information [at column 12, lines 28-41, as sort speech data from phone calls or incoming voice messages for automatic detection of speech data of interest];

generate a final criteria measurement value associated with the voice information [at column 7, lines 28-44, as summing confidence scores over the speech data];

perform actions if the voice information includes a stored voice representation [at column 12, lines 28-41, as respond to, route, or classify the phone call or incoming voice message using the sorting for detection of speech data of interest];

performing the stored action based on the final criteria measurement value [at column 12, lines 28-41, as sort, classify or route based on the topic, wherein at column 5, line 64-column 6, line 1 the topic choice is a confidence score that a topic is present].

11. Claim 13 is set forth including the limitations of claim 10 and with additional limitations similar to limitations set forth in claim 4. McDonough describes the limitations as indicated there.

12. Claim 14 is set forth including the limitations of claim 10 and with additional limitations similar to limitations set forth in claim 5. McDonough describes the limitations as indicated there.

13. Claim 15 is set forth including the limitations of claim 10. McDonough describes those limitations as indicated there. McDonough also describes additional limitations as follows:

receiving voice information during a call [at column 12, lines 37-38, as spoken message by a phone call from a caller];

compiling statistics on the call [at column 7, lines 46-47, as compute the scoring statistic given the data in the message].

14. Claim 16 is set forth including the limitations of claim 10 and with additional limitations already described there.

15. Regarding claim 17, McDonough describes the claimed limitations as a whole recognizable to one versed in the art as the embodiment for processing untranscribed speech by describing the content and functionality of the recited limitations recognizable as a whole to one versed in the art as the following terminology:

voice representations and voice messages [at column 6, lines 23-29, as untranscribed speech data];



storing voice, corresponding to a word or phrase [at column 2, lines 1-17, as training words to the vocabulary, and at column 5, lines 47-48, as a vocabulary of words and phrases for speech events];

storing actions [at column 2, lines 14-17, as create a new node associating an action with a word];

receive a voice message [at column 1, lines 53-54, as provide an input speech message];

analyze the voice message to determine if one or more stored voice representations occur in the message [at column 5, lines 43-50, as process a spoken message to produce a signal for the potential speech events in the spoken data];

generate a final criteria measurement value associated with the voice message [at column 7, lines 28-44, as summing confidence scores over the speech data];

each voice representation is associated with a final criteria measurement value [at column 7, lines 28-44, as putative words and phrases with confidence scores are summed over the speech data];

perform one (or more) action(s) if the stored voice representations are found in the voice message [at column 2, lines 1-8, as route the message according to the action associated with the word];

performing the (stored) action based on the final criteria measurement value [at column 12, lines 28-41, as sort, classify or route based on the topic, wherein at column 5, line 64-column 6, line 1 the topic choice is a confidence score that a topic is present];

a storage device for storing the parameters associated with the claimed functionality [at column 12, line 2, as the internal structure of the event detector, for the example at column 2, lines 1-9, the word nodes and action nodes];

a processor for accomplishing the claimed functionality [at column 5, lines 45-46, as a speech event frequency detector].

16. Claim 22 is set forth including the limitations of claim 17 and with additional limitations similar to limitations set forth in claim 9. McDonough describes the limitations as indicated there.

17. Claims 23, 28, and 29 are set forth with limitations similar to claims 10, 15, and 9. McDonough describes the limitations as indicated there. McDonough also describes additional limitations as follows:

a storage device for storing the parameters associated with the claimed functionality [at column 12, line 2, as the internal structure of the event detector, for the example at column 2, lines 1-9, the word nodes and action nodes];

a processor for accomplishing the claimed functionality [at column 5, lines 45-46, as a speech event frequency detector].

18. Claim 47 is set forth with limitations similar to limitations set forth in claim 1. McDonough describes the limitations as indicated there. McDonough also describes additional limitations as follows:

means for storing the parameters associated with the claimed functionality [see Fig. 1, items 20, 22, and their descriptions especially at column 12, line 2, of the internal structure of the event detector, for the example at column 2, lines 1-9, the word nodes and action nodes];

means for receiving and analyzing a voice message and accomplishing the claimed functionality [see Fig. 1, items 10, 12, 16, 18, and their descriptions, especially at column 5, lines 45-46, of a speech event frequency detector, topic classifier and classifier output].

19. Claim 48 is set forth with limitations similar to limitations set forth in claim 23. McDonough describes the limitations as indicated there, where the storage device and the processor are the means for storing, means for receiving, and means for analyzing.

***Claim Rejections - 35 USC § 103***

**McDonough and Furui**

20. Claims 2, 11, 18, 24, 30, 32, 35-37, 39-41, 43-44, 46, and 49-50 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al. [US Patent 5,625,748] in view of Sadaoki Furui, "Digital Speech Processing, Synthesis, and Recognition," Marcel Dekker, Inc., New York, 1989, pp. 225-289, both already of record.

21. Claim 2 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3), and reproduced here:

Claim 2 is set forth including the limitations of claim 1. McDonough describes those limitations as indicated there. McDonough [at column 7, lines 26-48] also describes phonetic wordspotting for the preferred embodiments.

Furui describes:

a voice message [at page 226, lines 19-22, as speech waveforms];

each stored voice representation is a phoneme representation of a word or phrase [at page 244, lines 1-4, as reference templates use phonemes concatenates to represent words].

Although, McDonough describes phonetic wordspotting, McDonough does not explicitly describe phoneme models.

To the extent that McDonough's stored voice representations of words are not necessarily phoneme representations, it would have been obvious to one of ordinary skill in the art of speech recognition at the time of invention to include Furui's phoneme based lexicon for wordspotting as McDonough's trained vocabulary, because McDonough points out phonetic wordspotting as preferred.

22. Claim 11 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3), and reproduced here:

Claim 11 is set forth including the limitations of claim 10 and with additional limitations similar to limitations set forth in claim 2. McDonough and Furui describe and make obvious the limitations as indicated there.

23. Claim 18 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3), and reproduced here:

Claim 18 is set forth including the limitations of claim 17 and with additional limitations similar to limitations set forth in claim 2. McDonough and Furui describe and make obvious the limitations as indicated there.

24. Claim 24 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3), and reproduced here:

Claim 24 is set forth including the limitations of claim 23 and with additional limitations similar to limitations set forth in claim 2. McDonough and Furui describe and make obvious the limitations as indicated there.

25. Regarding claim 30, McDonough describes the claimed limitations as a whole recognizable to one versed in the art as the embodiment for processing untranscribed speech comprising:

storing actions [at column 2, lines 14-17, as create a new node associating an action with a word];

receive a voice message [at column 1, lines 53-54, as provide an input speech message];

speech [at column 6, lines 23-29, as untranscribed speech data];

predetermined patterns of speech [at column 7, lines 27-37, as HMMs from training and modeling];

analyze the voice message to determine if it exhibits a predetermined pattern of speech [at column 5, lines 43-50, as process a spoken message to produce a signal for the potential speech events in the spoken data];

perform actions if the predetermined pattern is found in the voice message [at column 2, lines 1-8, as route the message according to the action associated with the word].

Although, McDonough [at column 7, lines 27-44] describes spotting the words and phrases of the speech data using phonetically trained HMMs for the preferred embodiments, McDonough describes using HMMs for this method as known techniques. Consequently, McDonough does not describe details of the techniques. In particular, McDonough does not explicitly describe HMMs representing either a tone of speech or a frequency of speech.

Furui [at page 255, lines 29-38 & page 258, lines 16-18] describes widely investigated word modeling by phonetic HMMs and that feature vectors are applied in HMMs. Furui describes:

the predetermined pattern representing a tone of speech in the voice message [at page 8, lines 1-15 and Fig. 8.15, as a lattice taking account of allophones, coarticulation, stress, and syllables];

the predetermined pattern representing a frequency (or other) of the speech in the voice message [at page 278, lines 3-9, as Markov models for recognition of input speech converted into spectral feature vectors by DFT].

In view of the teachings of Furui about the essential nature of voice containing frequency and tone, McDonough's stored voice representations must represent the frequency and tone of voice; however, to the extent that McDonough's stored voice representations of phonemes, words, and phrases may not innately represent frequency (or tone), it would have been obvious to one of ordinary skill in the art of speech recognition at the time of invention that Furui's DFT produces frequency spectral parameters to represent the HMMs suitable for implementing McDonough's HMMs for word and phrase spotting, because McDonough points out HMMs as preferred.

Although McDonough prefers HMM representations for the voice, McDonough's omission of particular details regarding HMMs is due to, and is evidence of, the lack of any need for one of ordinary skill in the art of pattern matching to be reminded of such details.

26. Claim 32 is set forth including the limitations of claim 30 and with additional limitations similar to limitations set forth in claim 5. McDonough and Furui describe and make obvious the limitations as indicated there.

27. Claim 35 is set forth including the limitations of claim 30 and with additional limitations similar to limitations set forth in claim 8. McDonough and Furui describe and make obvious the limitations as indicated there.

28. Claim 36 is set forth including the limitations of claim 30 and with additional limitations similar to limitations set forth in claim 9. McDonough and Furui describe and make obvious the limitations as indicated there.

29. Claim 37 and claims 39 and 40 are set forth with limitations similar to claim 30 and with limitations similar to limitations set forth in claims 14 and 16. McDonough and Furui describe and make obvious the limitations as indicated there, where a stored voice representation is a predetermined pattern of speech.

30. Claim 41 and claim 43 are set forth with limitations similar to limitations set forth in claim 30 and claim 22. McDonough and Furui describe and make obvious the limitations as indicated there. McDonough also describes additional limitations as follows:

a storage device for storing the information associated with the claimed functionality [at column 12, line 2, as the internal structure of the event detector, for the example at column 2, lines 1-9, the word nodes and action nodes];

a processor for accomplishing the claimed functionality [at column 5, lines 45-46, as a speech event frequency detector].

31. Claim 44 and claim 46 are set forth with limitations similar to limitations set forth in claim 37 and claim 22. McDonough and Furui describe and make obvious the limitations as indicated there. McDonough also describes additional limitations as follows:

a storage device for storing the information associated with the claimed functionality [at column 12, line 2, as the internal structure of the event detector, for the example at column 2, lines 1-9, the word nodes and action nodes];

a processor for accomplishing the claimed functionality [at column 5, lines 45-46, as a speech event frequency detector].

32. Claim 49 is set forth with limitations similar to limitations set forth in claims 30 and 47. McDonough and Furui describe and make obvious the limitations as indicated there.

33. Claim 50 is set forth with limitations similar to limitations set forth in claims 37 and 48. McDonough and Furui describe and make obvious the limitations as indicated there.

**McDonough and Epstein**

34. Claims 6-7, 20-21, 26-27, and 51-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al. [US Patent 5,625,748] in view of Epstein et al. [US Patent 6,327,343], both already of record.

35. Claim 6 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3), and reproduced here:

Claim 6 is set forth including the limitations of claim 1. McDonough describes and make obvious those limitations as indicated there. McDonough [at column 12, lines 40-41] also describes classifying stored voice messages.

McDonough, however, does not explicitly describe classifying the message as urgent.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

marking the message as urgent [at column 17, line 40, as adding an urgency stamp].

Although McDonough describes classifying message, McDonough's does not enumerate any particular classifications. In view of Epstein's labeling a message as urgent, it would have been obvious to one of ordinary skill in the art of message handling at the time of invention to include Epstein's concept of marking as urgent as a classification for McDonough's messages because that would have enabled signaling the addressee that an urgent message is available.

36. Claim 7 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3) , and reproduced here:

Claim 7 is set forth including the limitations of claim 1. McDonough describes and make obvious those limitations as indicated there. McDonough [at column 12, lines 36-41] also describes routing a phone call based on the message.

McDonough, however, does not explicitly describe calling a pager.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

calling a pager [at column 4, lines 1-3, as transmit a message to the user's pager].

Although McDonough describes routing calls and messages, McDonough does not enumerate any particular terminal type for receiving the message. In view of Epstein's



transmission to a pager, it would have been obvious to one of ordinary skill in the art of message handling at the time of invention to include Epstein's ability to call a pager for McDonough's messages because that would have enabled signaling the addressee when the user is not at home or is out of the office, as Epstein describes [at column 14, lines 47-48].

37. Claim 20 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3) , and reproduced here:

Claim 20 is set forth including the limitations of claim 17 and with additional limitations similar to limitations set forth in claim 4. McDonough describes the limitations as indicated there. McDonough [at column 2, lines 17-28] receives input from the user for establishing user selection of words and actions.

McDonough, however, does not explicitly describe an interface between the user and the speech event frequency detector.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein also describes:

a user interface [at column 6, lines 7-13, as a programming interface].

Although McDonough describes receiving input from the user, McDonough does not explicitly describe any means to accept this input. Because McDonough describes user input, it would have been obvious to one of ordinary skill in the art of processing devices at the time of invention to include Epstein's concept of a programming interface with McDonough because that would provide the means for the user to provide the input to train McDonough's neural network to the words and actions.

38. Claim 21 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3) , and reproduced here:

Claim 21 is set forth including the limitations of claim 17 and with additional limitations similar to limitations set forth in claim 5. McDonough describes the limitations as indicated there. McDonough [at column 2, lines 17-28] receives input from the user for establishing user selection of words and actions.

McDonough, however, does not explicitly describe an interface between the user and the speech event frequency detector.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein also describes:

a user interface [at column 6, lines 7-13, as a programming interface].

Although McDonough describes receiving input from the user, McDonough does not explicitly describe any means to accept this input. Because McDonough describes user input, it would have been obvious to one of ordinary skill in the art of processing devices at the time of invention to include Epstein's concept of a programming interface with McDonough because that would provide the means for the user to provide the input to train McDonough's neural network to the words and actions.

39. Claim 26 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3) , and reproduced here:

Claim 26 is set forth including the limitations of claim 23 and with additional limitations similar to limitations set forth in claims 13 and 20. McDonough and Epstein describe and make obvious the limitations as indicated there.

40. Claim 27 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3) , and reproduced here:

Claim 27 is set forth including the limitations of claim 23 and with additional limitations similar to limitations set forth in claims 14 and 21. McDonough and Epstein describe and make obvious the limitations as indicated there.

41. Claim 51 is set forth with limitations similar to limitations that are also set forth in claim 1. McDonough describes the limitations as indicated there.

McDonough [at column 5, lines 45-46] also describes a processor for accomplishing the claimed functionality.

McDonough, however, does not explicitly describe that the speech event frequency detector is computer-implemented and with computer-readable contents.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

a computer readable medium whose contents cause the computer to perform the procedure [at column 4, lines 4-30, as associated memory for software implemented on a computer to accomplish the functionality].

To the extent that McDonough's system does not necessarily contain typical computer hardware and software, it would have been obvious to one of ordinary skill in the art of implementing functional descriptions of operations at the time of invention to include Epstein's concept of computer implementations by software loaded in computer-readable memory to achieve McDonough's speech processing functionality because that would have provided the best implementation under particular circumstances identified and evaluated by a skilled artisan. For example, it is within the ordinary skill of an artisan to determine that software elements, such as Epstein's concept, benefits changing processing functions or adding other processing functions because software elements are more easily modified than hardware elements.

42. Claim 52 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3) , and reproduced here:

Claim 52 is set forth with limitations similar to limitations set forth in claim 23 and with additional limitations similar to limitations set forth in claim 51. McDonough and Epstein describe and make obvious the limitations as indicated there.

McDonough and Furui and Epstein

43. Claims 3, 12, 19, 25, 31, 33-34, 38, 42, 45, and 53-54 are rejected under 35 U.S.C. 103(a) as being unpatentable over McDonough et al. [US Patent 5,625,748] in view of Sadaoki Furui, "Digital Speech Processing, Synthesis, and Recognition," Marcel Dekker, Inc., New York, 1989, pp. 225-289 and further in view of Epstein et al. [US Patent 6,327,343], all already of record.

44. Claim 3 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3), and reproduced here:

Claim 3 is set forth including the limitations of claims 1-2. McDonough and Furui describe and make obvious those limitations as indicated there. McDonough [at column 11, lines 9-11] also describes implementing algorithms in the C programming language for computing.

McDonough and Furui, however, do not explicitly describe digital conversion of analog signals.

Epstein [at column 8, lines 23-34] also describes processing a voice message as the embodiment for stored audio data. Epstein describes:

a voice message [at column 8, lines 33-35, as stored audio data];  
converting the analog voice message from analog to digital [at column 7, lines 1-5, as convert the analog data, such as an analog recorder, into digital data]; and  
processing the digitized voice message [at column 9, lines 40-67, as convert voice data].

To the extent that McDonough's data is not innately digitized for the suggested computer algorithms, it would have been obvious to one of ordinary skill in the art of speech processing at the time of invention to include Epstein's analog to digital conversion for McDonough's data or Furui's data because the digital data could be processed on general purpose digital computers or programmable digital signal processors.

For the digital data then, Furui describes:

processing the voice message into phonemes [at page 244, lines 8-28, as short periods of input speech with phoneme-template structure are compared to phoneme reference templates to represent each word by concatenation of phonemes]; and

comparing the phonemes from the voice message with stored voice representations [at page 244, lines 42-44, as match the same phoneme positions between the input speech and reference templates].

45. Claim 12 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3), and reproduced here:

Claim 12 is set forth including the limitations of claims 10-11 and with additional limitations similar to limitations set forth in claim 3. McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

46. Claim 19 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3), and reproduced here:

Claim 19 is set forth including the limitations of claims 17-18 and with additional limitations similar to limitations set forth in claim 3. McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there. Epstein also describes further limitations as follows:

an analog to digital converter [at column 7, lines 1-5, as an analog-to-digital converter].

47. Claim 25 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3), and reproduced here:

Claim 25 is set forth including the limitations of claims 23-24 and with additional limitations similar to limitations set forth in claim 12. McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there. Epstein also describes further limitations as follows:

an analog to digital converter [at column 7, lines 1-5, as an analog-to-digital converter].

48. Claim 31 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3), and reproduced here:

Claim 31 is set forth including the limitations of claim 30 and with additional limitations similar to limitations set forth in claim 3. McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

49. Claims 33 and 34 are set forth including the limitations of claim 30 and with additional limitations similar to limitations set forth in claims 6 and 7. Neither McDonough nor Furui explicitly describes the additional limitations of claims 6 and 7; however, McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

50. Claim 38 is rejected using the same rationale as in the previous Office action (mailed November 20, 2002 as paper 3), and reproduced here:

Claim 38 is set forth including the limitations of claim 37 and with additional limitations similar to limitations set forth in claim 12. McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

51. Claim 42 is set forth including the limitations of claim 41 and with additional limitations similar to limitations set forth in claim 21. Neither McDonough nor Furui explicitly describes the additional limitations of claim 21; however, McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

52. Claim 45 is set forth including the limitations of claim 44 and with additional limitations similar to limitations set forth in claim 27. Neither McDonough nor Furui explicitly describes the additional limitations of claim 27; however, McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

53. Claim 53 is set forth with limitations similar to limitations set forth in claim 30 and with additional limitations similar to limitations set forth in claim 51. Neither McDonough nor Furui explicitly describes the additional limitations of claim 51; however, McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

54. Claim 54 is set forth with limitations similar to limitations set forth in claim 37 and with additional limitations similar to limitations set forth in claim 51. Neither McDonough nor Furui explicitly describes the additional limitations of claim 51; however, McDonough, Furui, and Epstein describe and make obvious the limitations as indicated there.

### ***Response to Arguments***

55. The prior Office action, mailed August 27, 2007, objects to the claims and rejects claims under 35 USC § 102 and § 103, citing McDonough and others. The Applicant's arguments and changes in AMENDMENT AND RESPONSE TO FINAL OFFICE ACTION, filed November 5, 2007, have been fully considered with the following results.

56. With respect to objection to those claims needing clarification, the amendment remove the indicated grounds for objection. Accordingly, the objections are removed. Please see new grounds of objection.

57. With respect to rejection of claims under 35 USC § 102 and § 103, citing McDonough alone and in combination, the Applicant's arguments appear to be as follows:

a. The Applicant's argument appears to be that McDonough does not associate values with the voice representations and that the Examiner has not clearly explained how McDonough's probabilistic models, with parameters, meet the claim limitation of "value" which is associated with the voice representations. The Applicant concludes that neither Furui nor Epstein describe this subject matter. This argument is not persuasive because the Examiner's response to a similar argument at numbered section 10 of the prior Office action (mailed August 27, 2007) explains that McDonough's parameter values, which are associated with the models of spoken words, corresponds to McDonough's [at column 5, lines 45-58] term "events", which McDonough defines in order to use it inclusively for words, phrases, and more in a speech recognition vocabulary, in a spoken message, and in text, which is possibly transcribed from speech. That section of McDonough has now been incorporated into the citations from McDonough that correspond to claim limitations in the rejection explanation elsewhere in this Office action.

b. The Applicant's argument appears to be that how the particular terminology applies to the particular embodiments found in the specification should be used to limit the subject matter that appears in the claims. This argument is not persuasive because the preferred embodiment does not limit broader claims that are supported by the written description.

c. The Applicant's argument appears to be that McDonough does not generate the appropriate final criteria measurement value, arguing that McDonough's confidence summation occurs without basing the summation on or even referencing a value associated with a particular stored voice representation. the Applicant then concludes that neither Furui nor Epstein describe



this subject matter. This argument is not persuasive because the features upon which the Applicant's argument relies are not recited in the rejected claims. The claimed invention does not base generation of the final criteria measurement value on, or otherwise reference, the value associated with a particular stored voice representation.

d. With respect to Furui, the Applicant's argument appears to be that Furui does not explicitly describe performing the action if the predetermined pattern is found to occur and that McDonough does not explicitly describe the predetermined pattern represent a tone or frequency and performing an action if the predetermined tone pattern or frequency pattern are found. Although the Examiner agrees generally that some of McDonough's teachings differ from some of Furui's teachings, this argument is not persuasive because one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. Furui, when filtered through the knowledge of one skilled in the art of speech recognition, combines with McDonough to teach or suggest all the claim elements, as enumerated in the explanations of the rejections. Neither Furui nor McDonough should be read without reference to the other because the question is whether the hypothetical person of ordinary skill in the relevant art, and familiar with all that the references disclose, would have found it obvious to make a structure corresponding to what is claimed.

e. The Applicant's argument appears to be that the Examiner's articulated rationale does not reasonably support a reason that one of ordinary skill in the art of speech recognition would have found the combination of Furui's teaching, Epstein's teaching, and McDonough's teaching to be obvious. This argument is not persuasive because the statements of each rejection in both the previous Office actions and elsewhere in this Office action list the factual teachings of McDonough, Furui, and Epstein, and list further teachings that Furui or Epstein uses reasons for the particular choice. Each of these references further give their own rationale that would have given an artisan reason to modify or argument the explicit teachings of, for example, McDonough. A proper question for the obvious combination is whether one of ordinary skill in the art of speech

recognition, and familiar with all that the references disclose, would have found it obvious to use Furui's patterns for McDonough's patterns. A proper question is whether one of ordinary skill would have found it obvious to use Epstein's user interface to access McDonough's system. It is then proper to rely to some extent on knowledge of the person of ordinary skill in the art to complement that which is explicitly described and to recognize that the benefits that Furui and Epstein describe could transfer to McDonough's system along with Furui and Epstein's explicit teachings.

### ***Conclusion***

58. Any response to this action may be mailed to:

**Mail Stop Amendment**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**or faxed to:**

(571) 273-8300, (for both formal communications intended for entry and for informal or draft communications, but please label informal fax as "INFORMAL" or "DRAFT")

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Some patent correspondence may be delivered by hand or delivery services, other than the USPS, addressed as follows and brought to U.S. Patent and Trademark Office, Customer Service Window, **Mail Stop Amendment**, Randolph Building, 401 Dulany Street, Alexandria, VA 22314

59. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L. Storm, of Division 2626, whose telephone number is (571) 272-7614. The examiner can normally be reached on weekdays between 7:00 AM and 3:30

PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: [ebc@uspto.gov](mailto:ebc@uspto.gov). For general information about the PAIR system, see <http://pair-direct.uspto.gov>. If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

November 21, 2007

/Donald L. Storm/

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Primary Patent Examiner  
Division 2626